Integrating Engineering and Social Knowledge for Community Transformation: The Case of La Vía Community

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Abstract – La Vía Community in Aguadilla, Puerto Rico constitutes one of the most vulnerable and marginal communities in the west region of this Caribbean island. This community confronts growing levels of social decomposition that are accentuated by a process of community disintegration due to governmental neglect and indifference. Suffering from inadequate and sometimes collapsing communal infrastructure, roads, housing and public spaces (i.e., parks, libraries, community centers, basketball courts), La Vía presents one of the most challenging scenarios for community development. Under the coordination of the Instituto Universitario para el Desarrollo de las Comunidades (University Institute for Community Development) Engineering and Social Science students, as well as faculty, joined efforts to form a multidisciplinary work group that would seek ethical and integral solutions to La Vía’s diverse problems. Using a Participatory Action Research (PAR) methodology, these students and faculty are implementing an innovative approach to development that is both sensitive and responsive to community concerns and initiatives. The experience of three years of continuous university-community collaboration will be presented in this paper to point to the strength and pitfalls of this educational approach.

INTRODUCTION

This work addresses an ongoing issue in academia regarding the possibility to harmonize technical vis à vis social, as well as quantitative vis à vis qualitative research approaches. Under the aphorism, “…for an education with science and conscience”, the Instituto Universitario para el Desarrollo de las Comunidades (University Institute for Community Research, UICR) based at the University if Puerto Rico, Mayagüez Campus, is pursuing the objective of fostering a multidisciplinary approach that will result in the development of both technical knowledge and community social development through service learning. La Vía Community in Aguadilla, catalogued as a “special community,” became one of the first communities in Puerto Rico in which the UICR involved faculty and students of Engineering and Social Science to identify infrastructure and social concerns using Participative-Action-Research (PAR) methodology. Under the coordination of the UICR, Engineering and Social Science students (as well as faculty) joined efforts to form a multidisciplinary work group that would seek ethical and integral solutions to La Vía’s diverse problems. Using (PAR) methodology, these students and faculty are implementing an innovative approach to development that is both sensitive and responsive to community concerns and initiatives. This methodology focus on the central role the community plays in collaborating with researchers and practitioners in defining, designing, implementing and evaluating the issues, and concerns the intervention intends to address. Accordingly, the UICD projects for community development places a central role in community residents participation.

While the University of Puerto Rico is widely recognized for its leadership position in fulfilling its social responsibility of developing new generations of professionals, researchers and artists, as well as promoting technological and philosophical advancement, a group of faculty interested in social change and development presented a proposal to reorient the academic agenda. The emphasis was to be placed in the development of citizenship values of social responsibility and participation in our alumnae. La Vía project is the first ongoing research project of the UICR in which, based on the needs identified by the community, multidisciplinary groups of students and professors works hand in hand with community leaders and residents to resolve the community most pressing problems. The experience of three years of

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continuous university-community collaboration is presented in this paper to point to the strengths and pitfalls of this educational approach.

Methodological Approach

The literature on community development tend to concur on three key elements to foster a successful ongoing program (Ander-Egg: 1994; Kretzmann (et.al.): 1997 & Ledwith: 2005). These are:

- Economic and social initiatives should be geared to the whole community, not just one sector or group.
- Development is only possible through active participation of most, if not all the, persons in the community.
- Confidence and respect to the initiatives of the members of the community.

In order to accomplish the above mentioned key elements, all activities promoted in the community by the research group must be directed to fulfill the needs of the community as expressed by its members. This requires a concerted action involving working groups constituted by members of the community and members of the university. No problem has just one solution, and most problems are complex enough to require the development of multiple plans that can be put in place at the same time.

Social change does not occur in a vacuum, and most social problems take decades to form. Consequently, real social change must occur a step at a time, with an open agenda and flexible time frame (contrary to what most grants and research opportunities expect and allows). Thus, beginning with a change in attitudes is more important than, and usually a prerequisite to, material changes. In order to accomplish gradual but transformational social change, we must identify and help in the formation of community leaders. Moreover, we must involve the community in the workings of, those who have the ministerial duty to serve them, government and finally yet importantly, promote the participation of historically underrepresented members in the community such as women, youth and the elderly. Such social change together with technical and professional support, as well as assistance from the University’s components (its traditional strengths and attributes), will lead to an ongoing project of raised expectations and continuous commitment.

End Results: Expectations and Commitment

The expectations and commitment that PAR methodology aspire to foster is one in that can change from community to community but is also one in which the relation community-university is strengthened by these new expectations and commitment rather than by pure material gains (although these last are also important). Among the most important set of expectations and commitments that PAR can set in motion are that the university-community collaboration responds to a legitimate and expressed community need (Levin & Greenwood: 2005). All PAR intervention must inspire respect to the identity of the community members and strengthen their human dignity (Wiesenfeld, 2001). Traditional welfare state and paternalistic approaches, to community intervention, on the other hand, tend to portray community residents and the community per se as pathological entities that need eradication and control rather than collaboration and transformation. Therefore, PAR methodology must place an emphasis in conserving, strengthening and increasing the natural capital of the community, and in order to do so, it must take into account the wellbeing of the neediest members of the community (Freire: 1970; Fals Borda & Rahman: 1991). Finally, all PAR interventions must create the basis for self-reliance in the way that the project should be sustainable by the community after the research group leaves (Wadsworth: 2005).

La Vía

La Vía Community is located in the town of Aguadilla, in the northwest region of Puerto Rico. This community constitutes one of the most vulnerable and marginal communities in this region. This community confronts growing levels of social decomposition that are accentuated by a process of community disintegration due to governmental neglect and indifference. Suffering from inadequate and sometimes collapsing communal infrastructure, roads, housing and public spaces (i.e., parks, libraries, community centers, basketball courts), La Vía presents one of the most challenging scenarios for community development in this Caribbean island.

The community intervention began in August 2001 after a “snow ball effect” process in which community leaders were identified and a community assembly was carried out. During the first year a total of 60 students did participate. Twelve of these students did participate as community liaison and were in charge of identifying community leaders and persons who were willing to work for the betterment of their community. After contacting and meeting with several community leaders, it was accorded that a community assembly should be held to identify community concerns and create work groups constituted by community members and University members. The assembly was held and the community identified the threat of being expropriated, expelled and their community being disintegrated due to a government plan to expand the only street in La Vía to turn it into a multi-lanes Avenue. The second main concern was the lack of minimal infrastructure for community, cultural and sport activities such as a court, a community center or a library in the community. The assembly accorded to give special emphasis to children who lacked adequate places for education and recreation. Responding to the needs identified in the community assembly, two working groups composed of University students, faculty and community residents were established. The education group (EG), in charge of running a tutoring and mentoring program for the children of la Vía since low educational achievement rates was one of the reported concerns of the community. The second group, the infrastructure group (IG), originally in charge of researching the expropriation project to inform the community of its impact and of realizing an assessment of possible community facilities to be rescued or acquired to develop a community multiple uses center that would serve as a library and activities center.
During that first year, tutoring and mentoring activities were carried in a “virtual center” under the sun and rain. Twenty children from the community participated actively in after-school program run by university students from UPR Aguadilla and Mayagüez, while the IG actively worked gathering information from the government Planning Board and Transportation and Public Works Offices to report on the road expansion plan. At the end of the first year, the EG reported that it was clear that to run a successful tutoring and mentoring program, a place was to be found and some basic equipment and materials (i.e., tables, chairs, computers, printers, books) were to be compiled. The difficulty to meet with children for tutoring and mentoring was at its maximum during the raining season making impossible to meet outdoors. While the IG identified two abandoned government facilities and similar number of dwellings in the community fit to rehabilitate as possible community center. Moreover, the IG was able to set meeting with the Transportation and Public Works Office for an information meeting to explain the extent of the road expansion project. Dwellers were informed the exact number of them who were to be expropriated and relocated, and offerings were set for the value of their properties. With the exception of one dweller, residents to be expropriated did consent to the relocation, and the committee moved forward to work for the wellbeing of those who remained in the community.

During the second year, 2002, the new committees (since new students and even faculty members arrived in a “revolving door” kind of process) followed on the footsteps of the previous committees and the EG decided to move tutoring and mentoring activities to the local elemental school. The EG set meeting at the Property Offices at UPR Aguadilla and Mayagüez to request the donation of computers, tables and chairs to be retired but still in working conditions for the benefit of the community. Twelve computers, 2 printers, as well as 15 chairs and 3 tables were donated by the two Campuses. While a growing number of children did participate, its participation was erratic since the local school is in the “center” of the town of Aguadilla and the community is on the hills. Many parents informed that it was difficult for both them and the children to walk twice a day to school and many children informed that they felt that the program was turning into an extension of the school (i.e., a school after the school). On the other hand, the IG meet with representatives of the government facilities that laid abandoned near the community and that were identified by the previous IG. Sadly enough, none of the government agencies were willing to hand over the facilities and did set an average tag of $200,000 price on the abandoned and highly deteriorated structures.

During 2003, the EG and IG decided to join efforts in order to take the necessary measures to guarantee the acquisition of adequate facilities and infrastructure and tutoring activities were postponed for that year. Instead both groups focused in setting meetings with representatives of the Governor’s Office of Special Communities (OSC) (a new office created by former governor of Puerto Rico, Sila Calderón, to foster community development in marginal and vulnerable communities around Puerto Rico) to present the community needs and interests. As the result of those meetings, La Vía was included in the (OSC) Electronic Libraries project that would bring state of the art computer facilities to the special communities. However, in order to qualify, a facility was to be found that would meet several security and operational standards (i.e., separated male and female bathrooms, security bars, adequate electrical infrastructure and handicapped persons access).

During year 2004, Mr. Luis “Tony” Rosa (a community leader) asked the IG to assess the conditions of a property that he had recently acquired and it was identified by previous IG as a viable facility for the electronic library. Asserting that it was time for action, Mr. Rosa donated the property to the community as a viable structure for the center. The IG then mobilized the community to rehabilitate the structure. During 2004 and 2005 Community residents, university students and faculty volunteered to rebuild and restore the facility. Community members donated the bars for security, Physical Plant employees from the UPR Aguadilla (some residents themselves) volunteered to restore the whole electrical wiring and water system of the facility. Bathrooms were rebuilt and industrial engineering student did set up the division of the facility for an efficient use of the space. Civil engineering students developed several designs for a ramp to give access to handicapped persons, still up to today the designs require resources amounting near $50,000 (since there is a difference in altitude between the main road and the structure of about 30 feet).

During 2006, the committees have work in assembling the OSC provided state of the art computers and furniture, and have help in maintaining the areas of the facility. The Electronic Library is set to function, computers and all are ready, waiting for both community children and University students to work together for the benefit of a community that have struggled hard to raise their future generations. Yet, the facilities cannot be inaugurated because it lacks adequate access for the handicapped. Everyone in this university-community effort is tirelessly working to assemble the resources needed to complete the handicapped access, so soon all the children of La Vía could benefit from what they deserve, good education opportunities. After all, La Vía is Spanish for “The Way.”

Bibliography


